REMARKS

Applicant appreciates the courtesy of telephone conferences on May 8 and 9, 2008 with Examiner Tan Tran. On May 8, Examiner Tran initiated a phone conference in which he proposed to allow the claims if Applicant agreed to an Examiner's Amendment of Claim 1 to recite "defect" instead of "dislocation." On May 9, Applicant agreed to the Examiner's Amendment.

However, upon further review by Applicant, there is an issue with simply using the word "defect" in place of "dislocation." It is known that a dislocation is a type of linear crystalline defect. See our original specification at Page 34, Lines 21, 22 and Page 38, lines 9 to Page 40, line 24. In particular, a dislocation is a linear lattice defect in a crystal near which the regular atomic arrangement is broken. *See The Crystal Lattice*, Page 233. Applicant believes that the phrase "defect of dislocation" as defined in the specification and in the attached excerpt from *The Crystal Lattice* better defines the present invention without adding new matter or broadening the claims.

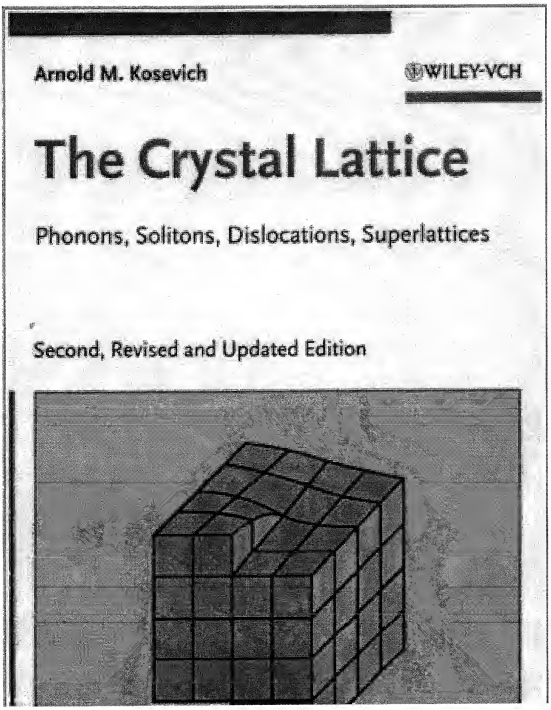
It is believed that applicant has met the requirements of 37 CFR §1.312 and an early notification of the entrance of this amendment would be appreciated to facilitate the timing of the payment of the issue fee.

If there are any questions with regards to this matter, the undersigned attorney would appreciate a telephone conference.

Very truly yours,

SNELL & WILMER L.L.P.

Joseph W. Price
Registration No. 25,124
600 Anton Boulevard, Suite 1400
Costa Mesa, California 92626-7689
Telephone: (714) 427-7420
Facsimile: (714) 427-7799


Arnold M. Kosevich
WILEY-VCH
The Crystal Lattice
Phonons, Solitons, Dislocations, Superlattices
Second, Revised and Updated Edition

10.1
Dislocations

Dislocations are linear defects in a crystal near which the regular atomic arrangement is broken. In a theoretical treatment, dislocations in real crystals perform as important a role as electrons do in metals.

There are many microscopic models of dislocations. In the simplest model the dislocation is taken to be the edge of an "extra" half-plane present in the crystal lattice. In the conventional atomic scheme of this model where the trace of the half-plane coincides with the upper semiaxis Oy (Fig. 10.1), the edge of the extra half-plane on the z-axis, is called an *edge* dislocation. The regular crystal structure is then greatly distorted only in the near vicinity of the isolated line (the dislocation axis) and the region of irregular atomic arrangement has transverse dimensions of the order of a lattice constant. If we surround the dislocation with a tube of radius of the order of several interatomic distances, the crystal outside this tube may be regarded as ideal and subject only to elastic deformations (the crystal planes are connected to one another almost regularly) and inside the tube the atoms are considerably displaced relative to their equilibrium positions and form the *dislocation core*. In Fig. 10.1 the atoms of the dislocation core are distributed over the contour of the shaded pentagon.

Nevertheless, deformation even occurs far from the dislocation. The deformation at a distance from the dislocation axis may be seen by tracing a path in the plane xOy (Fig. 10.1) through the lattice sites along the closed contour around the dislocation core. We consider the displacement vector of each site from its position in an ideal lattice and find the total increment of this vector in the path. We go around the dislocation axis along the external contour starting from the upper left angle (atom 1) and see that the atomic displacement at the end of the path is nonzero and equal to one lattice period along the x-axis. This singularity of the dislocation deformation can be considered as the initial one when we define a dislocation in a crystal.

The Crystal Lattice: Phonons, Solitons, Dislocations, Superlattices, Second Edition. Arnold M. Kosevich
Copyright © 2005 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim
ISBN: 3-527-40508-9